NOAA REPORT

Vol. III, No. 6 June 1994

Sanctuary Superintendent Honored for Environmental Protection: The Nature Conservancy's Florida chapter awarded Florida Keys National Marine Sanctuary Superintendent Billy Causey the Chairman Award—its highest chapter honor—on May 6.

The Chairman's Award honors an individual or organization whose actions have significantly advanced environmental protection in Florida. Causey, who previously owned a private tropical marine life company, joined NOAA in 1983 as the Looe Key National Marine Sanctuary Manager. He has served as superintendent of the Florida Keys National Marine Sanctuary since August 1991.

NEWS BRIEFS

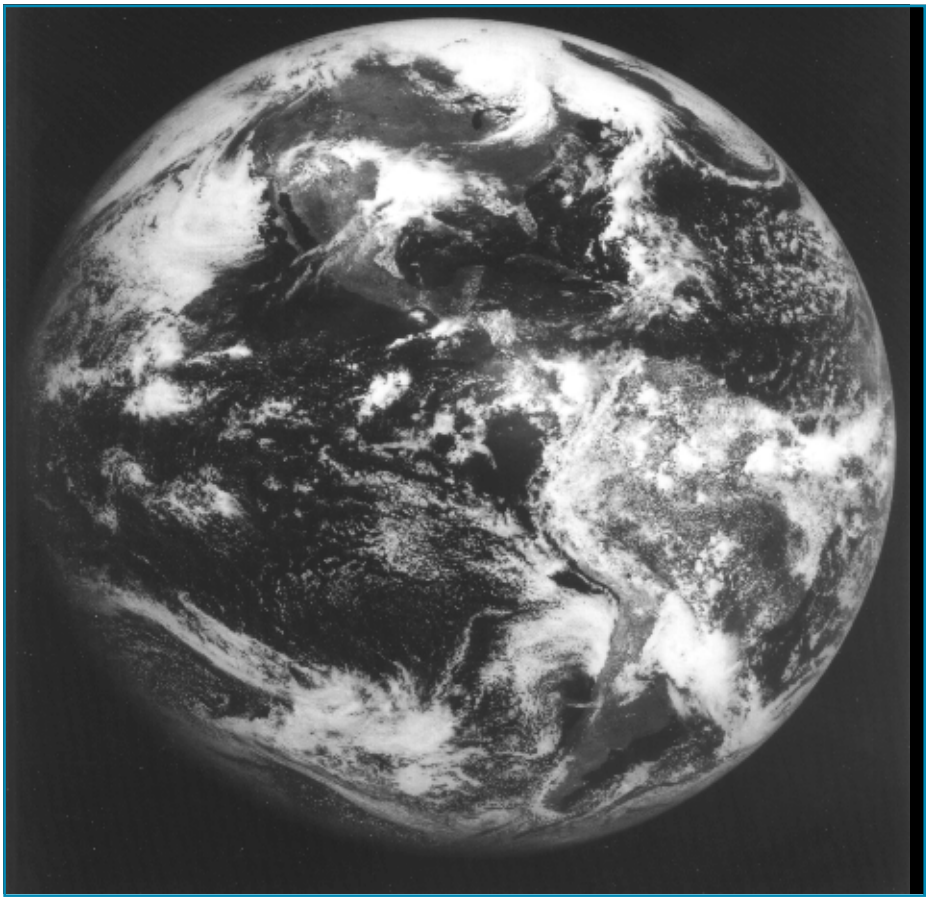
Coastal Teams Visit Md., N.C.: NOAA evaluation teams will visit Maryland and North Carolina this month to assess the progress of the two states' coastal management program and gather local views on the operation and management of the programs.

Under the programs, NOAA's Office of Ocean and Coastal Resource Management provides nearly $2 million in matching funds to the states for their coastal management programs.

In North Carolina, the funding includes implementation of the coastal permitting program, the provision of technical assistance to local communities, and the development of a "nonpoint source" pollution control program to address urban and agricultural runoff.

Ozone Scientist Wins Flemming Award: The NOAA scientist who first linked CFC emissions to polar ozone depletion has been named one of five 1993

continued on page 8



This first visible engineering test image from GOES-8 was made on May 9 at 12:30 pm eastern time. The view is of the Western Hemisphere, with the Americas visible through cloud cover.

'All Our Expectations Have Been Met'

GOES Test Image Comes in 'Sharp, Crisp and Clear'

NOAA and NASA satellite controllers have received the first visible engineering test image from the Nation's newest Geostationary Operational Environmental Satellite, GOES-8, which was launched from Cape Canaveral Air Force Station on April 13.

"The first image was right on target—sharp, crisp, and clear," said Gary Davis, NOAA geostationary program manager. "All our expectations have been met. We are very pleased."

Infrared Images Next

The first infrared images from GOES-8 will be taken within a month, and the spacecraft is scheduled to become operational in mid-October.

And for all you NOAA Netsurfers, you can see the GOES image for yourself on Internet's World Wide Web at the NOAA Home Page, *www.noaa.gov.*

Hurricane Conference Opens '94 Season

Many Atlantic and Gulf coastal areas continue to be at risk this hurricane season, but NOAA's National Hurricane Center anticipates a new record in accurate forecasting as it tests a whole range of new technologies.

Robert C. Sheets, director of the National Hurricane Center, told hurricane specialists, emergency managers and news media gathered for a seasonal preview that the Nation's forecast capability is improving with the introduction this year of a number of new observing systems. These include an expanded network of new Doppler weather surveillance radars along the coast, a new geostationary weather satellite and an important boost in supercomputer hurricane modeling capability.

Risks Remain Unchanged

According to Sheets, however, the risks remain unchanged, with the possibility of more frequent damaging hurricanes and continued population growth in highly vulnerable coastal areas, plus public indifference.

"Hurricane-prone areas of the Nation have received priority in planning the on-going modernization of the National Weather Service, and will continue to receive top attention," said Robert C. Landis, deputy director of NOAA's National Weather Service.

"Here in Florida we have worked closely with Governor [Lawton] Chiles and state planning and emergency services to expedite delivery of new technology. In the coming months and years we expect the new radars, the GOES satellite system, improved hurricane modeling, and big improvements in public communications to help our forecast experts here in Miami improve the Hurricane Center's already impressive record for accuracy," he said.

Landis said that 23 WSR-88Ds will be located along the Atlantic and Gulf of Mexico coasts to better warn of hurricane landfalls and generation of tornadoes and flash floods as storms move inland. During 1994, 56 percent of the coast will be covered, compared with 17 percent in 1993.

New Numerical Model

This season, which lasts from June 1 through November 30, the Center will be drawing assistance in hurricane tracking from a new numerical model created by NOAA's Geophysical Fluid Dynamics Laboratory in Princeton, N.J. This will be run on the weather service's new Cray Model C-90 supercomputer delivered last winter; previous models will perform on an older Cray Model YMP-8.

In another promising development for better hurricane forecasting, the Commerce Department has begun the process of procuring NOAA's first high altitude reconnaissance aircraft through

continued on page 3

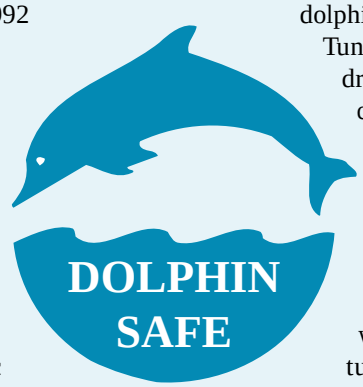
CORRECTION

An article in the April 1994 NOAA Report misidentified Rolland Schmitten's replacement as director of NMFS's Northwest Region. No replacement has yet been named. We regret the error.

All Tuna Must Be 'Dolphin Safe' for Sale in U.S.

Dolphin-safe tuna, which first appeared on American grocery shelves in small quantities in the 1980s, is now the only tuna you can buy in the United States.

Beginning June 1, it will be illegal under the 1992 amendment to the Marine Mammal Protection Act to sell, purchase or ship in the United States any tuna not caught under dolphin-safe conditions.



Dolphins in the eastern tropical Pacific Ocean frequently swim with schools of tuna. For many years, U.S. and foreign fleets in this region encircled dolphins to catch tuna. The air-breathing dolphins can become entangled in the nets and be killed or injured.

Hazardous Purse Seining

Generally, the fishing method most hazardous to dolphins has been a method of purse seining in which vessels intentionally encircle tuna and dolphins with a huge net that is then tightened, like a purse, around both fish and dolphins.

In general, tuna caught by purse seine vessels qualifies as dolphin safe only if it is accompanied by a statement by the captain and in some cases an official observer attesting that no nets were intentionally set on dolphins to catch the tuna. Tuna caught by high-seas driftnet vessels is also not considered dolphin safe.

Most canned tuna currently sold in the U.S. is already dolphin safe. In 1990 the major U.S. canners announced that they would no longer buy any tuna caught by methods considered unsafe for dolphins. These companies supply over 80 percent of the canned tuna sold in the U.S.

Through concerted efforts of fishing fleets of several countries, dolphin mortality in the eastern tropical Pacific tuna fishery reached a record low last year of approximately 3,600. In the late 1960s and early 1970s, well over 400,000 dolphins were being killed in some years.

Violators of the new dolphin-safe requirement are subject to civil fines of up to $10,000 per violation.

Friday Lauds 'Superb' NWS Employee Performance

Flood of '93 Impact Unprecedented: Report

National Weather Service forecasts helped minimize the loss of life and property during the Great Flood of 1993, which made an unprecedented economic and human impact on the midwestern United States, the weather service said in a report released last month.

The 348-page disaster survey report said the flooding, which began before March 1993 and continued through November, was unique in duration, extent and intensity.

"In terms of economic and human impact, the Great Flood of 1993 surpassed all floods in the United States in modern times," said Diana Josephson, NOAA's deputy under secretary for oceans and atmosphere who led the disaster survey team.

Sixth Great Lake?

The massive build-up of water, which ultimately formed what appeared in satellite imagery to be a sixth Great Lake in the Nation's heartland, set records for river stages, crop and property damage, and flood duration. Nine states and hundreds of thousands of people were affected.

During the event, 95 forecast locations in the Upper Midwest exceeded the previous record floods, many by six feet or more. Approximately 500 forecast points on major rivers and tributary systems exceeded flood stage at some time.

The extent of social disruption was almost beyond measure, Josephson observed. Estimates of economic losses range from $15-20 billion, rivaling costs for Hurricane Andrew. Experts estimate that more than 50,000 homes were damaged or destroyed, and approximately 54,000 people evacuated from flooded areas.

The disaster survey team visited much of the flooded nine-state region during August and September 1993. NOAA routinely conducts a survey of each major weather disaster to assess thoroughly all aspects of its forecast and warning system. The report contains 106 findings and recommendations.

Timely Information Saved Lives, Property

"The quality of weather service employees' performance overall was superb," said Elbert W. (Joe) Friday, Jr., director of the National Weather Service. "They performed extraordinarily, under extremely stressful conditions, for literally months." More than 30 weather and river forecast offices supported the widespread event.

"The timely information contained in their forecasts dramatically helped minimize the loss of life and property," Friday added.

The report notes that deficiencies stem from inadequate technology within the current forecast and warning system. These deficiencies will be corrected through the on-going modernization and restructuring of the NWS, along with a recently announced program called WARFS. WARFS—the Water Resources Forecasting System—allows managers to better predict floods and manage the Nation's valuable fresh water supplies.

The multi-year program to add new weather surveillance radars and Advanced Weather Interactive Processing Systems (AWIPS) to process and combine information from multiple radars should be maintained on schedule or accelerated whenever possible, the report adds.

The weather service has broad Federal responsibility to protect lives and property and support the Nation's economic and environmental well-being by providing public forecasts and warnings of weather and river conditions.

'94 Hurricane Season Begins

continued from page 2

informal exchange of information with the aircraft industry. Although no formal bid requests have been issued yet to the industry, Congress has appropriated funds to acquire a next generation aircraft. This season the Center will continue to rely on propeller-driven U.S. Air Force Reserve and Commerce P-3 aircraft.

Current research suggests that the Nation may be returning to a period like the 1940s-1960s, when major hurricanes struck the coast more frequently, Sheets said. The increasing population of seasonal and permanent residents along the coasts, particularly on the barrier islands, is at risk from rapidly rising waters known as storm surge. It is difficult to evacuate people from these areas because roadways have not kept pace with population growth.

Warning the Public

The challenge for the National Hurricane Center, Federal, state and local emergency managers, and the media is safeguarding this sizeable population, Sheets said. "Getting the word to the public is critical. The news media, amateur radio operators and NOAA Weather Radio are essential links to warning the public," he added.

"With the strong support of Vice President Gore, we are working with the Federal Emergency Management Agency on a cooperative public-private industry effort," Landis said. "The ultimate goal is extending coverage of NOAA Weather Radio to 95 percent of the nation especially coastal states." The present system covers 75 to 85 percent of the Nation. This will be coupled with a campaign for families to invest in weather radio receivers, Landis explained.

The weather service is also moving in a parallel effort with the Federal Communications Commission and Federal Emergency Management Agency to improve the Emergency Broadcast Service, a voluntary service provided by radio, TV and cable networks.

NETSURFERS' UPDATE

Take a look at the work done by the Arkansas-Red Basin River Forecast Center on the World Wide Web at *gopherpc.abrfc.noaa.gov.* And if you know of (or operate) any other NOAA Internet sites, tell us and we'll publish their addresses.

Foulson. . .

New Supercomputer's Role in Weather Forecasting

SUPERCOMPUTER IS NO GIGAFLOP

Commerce Secretary Ronald H. Brown has dedicated a new generation of supercomputers that will enable government weather forecasters to provide faster and more accurate forecasts.

The new Cray C90 supercomputer was dedicated at a special ceremony at NOAA's central computer facility in Suitland, Md., last month.

More sophisticated models of the atmosphere, important to increasing the accuracy of daily weather forecasts, will be possible with the new supercomputer.

"This new high-speed computer system will greatly boost the productivity of National Weather Service forecasting and help Americans in all walks of life make better daily decisions where weather is concerned," said Elbert W. Friday, NOAA's assistant administrator for weather services.

Superior Number Cruncher

A prime element in the $4.2 billion National Weather Service Modernization Program, the Cray C90 is expected to deliver a five-fold increase over the NWS' present computing speed, achieved with an earlier Cray computer, model Y-MP8. The superior new "number cruncher" is essential for incorporating into numerical forecasts an ever-increasing volume of data produced by NWS' new space- and earth-based observing systems.

Forecasters at NWS' National Meteorological Center will use the new computer to serve a wide range of weather data needs. The computer's superior "brainpower" will be especially helpful to meteorologists tracking hurricanes. The C90 also aids in routing planes around turbulent weather, offering an opportunity to make flights smoother and reduce fuel consumption. Precipitation forecasts generated by the new computer will benefit agricultural and marine activities as well.

The powerful Cray C90 operates in excess of 15 gigaflops (15 billion operations per second), compared with 2.5 gigaflops for the Y-MP8. One of the first atmospheric models to be implemented will be the new hurricane simulation program that was developed at NOAA's Geophysical Fluid Dynamics Laboratory in Princeton, N.J. Researchers tested the model during the 1993 hurricane season. Operating 12 hours behind real time, the model accurately predicted the track of Hurricane Emily in August last year as it veered away from the east coast.

The five-year, $46 million lease contract for the C90 was awarded to Cray Research, Inc., of Eagan, Minn., following a competitive procurement conducted on a full and open basis that allowed all domestic and foreign companies to participate. The contract includes support services.

Computers

The NOAA Central Computer Facility (NCCF) is managed and operated by the National Meteorological Center (NMC). The NCCF currently consists of a Hitachi Data Systems (HDS) EX-65, a National Advanced Systems (NAS) 9000-Series computer, the Cray Y-MP8 supercomputer and the new Class VII C90 supercomputer that is five times faster that the Cray Y-MP8.

The HDS EX-65 and the NAS 9000 are used for meteorological, hydrological and oceanographic data processing as well as satellite image

Secretary Ron Brown recently snipped a ribbon at Suitland, Md., to signify operational readiness of NOAA's new Cray C-90 high-speed computer system. The new supercomputer has the capacity to handle 15 billion math operations per second and produces numerical forecast models for the National Weather Service.

Secretary Brown, center with scissors, is assisted here, left to right, by George Murphy, chief of NOAA's automation division; Elbert W. Friday, NOAA assistant administrator for weather services; John Carlson, CEO, Cray Research Inc., builder of the C-90; Senator Paul Sarbanes, (D-Md.); Dr. D. James Baker, NOAA administrator; and Diana Josephson, Deputy Under Secretary of Commerce for Oceans and Atmosphere.

processing. It serves as host or processor for both the Cray Y-MP8 and the C90. The supercomputers are mainly used to run the complex computerized weather forecast systems called numerical models.

Operational Runs

The set of computer jobs run on the C90 takes meteorological and oceanographic data, analyzes it, creates predictions, and prepares information for worldwide distribution. It is composed of a number of sub-sets called "runs."

The superior new "number cruncher" is essential for incorporating into numerical forecasts an ever-increasing volume of data produced by NWS' new space- and earth-based observing systems.

There are seven such runs; five of them are executed twice daily using observational data taken at two set times. The seven runs are named either by their relative position within each cycle ("Early" or "Final"), or by their general purpose ("Regional," "Aviation," "Hurricane," or "Medium-Range Forecast"). The following is a brief description of these runs.

The Early (ERL) Run: This run provides a forecast for North America using data received up to one hour after the data collection times. This model quickly produces a two-day forecast.

The Regional (RGL) Run: This run produces updated two-day forecasts for North America using data received 2¼ hours after data collection time. This model produces a forecast similar to the ERL's. Statistics from this model are used for forecasts of maximum/minimum temperature, wind directions and probabilities of many other weather parameters.

The Aviation (AVN) Run: This run produces a global forecast for up to three days. Executed twice daily, it is used primarily to support international aviation interests. Plans are to increase this run to four times daily.

The Hurricane (HCN) Run: This run provides hurricane track forecast guidance to the National Hurricane Center (NHC), Miami. It is executed when a tropical storm or a hurricane develops or is expected to develop in the Atlantic, eastern Pacific or Gulf of Mexico.

The Medium-Range Forecast (MRF) Run: This run can provide a forecast for up to 12 days. Its main purpose is to generate a global forecast for the medium-range time scale, generally understood to mean the 3- to 10-day range.

The Ensemble Run: This run provides guidance for NMC's monthly outlooks. It is called an ensemble run because it compiles 14 daily forecasts that are used to determine a long-range forecast. Done once a day, this forecast generally provides up to a 14-day forecast.

The Final (FNL) Run: This is the last run in any one cycle. It is executed late in the cycle to use late-arriving data. It produces the best possible analysis to be used as a starting point in the next cycle.

Future NMC Model Development Plans

Implementation of the C90 will enable a considerable amount of model development over the next few years. Development efforts will include:

Regional Guidance: A new hurricane model will be tested in the 1994 hurricane season. It is expected to enable prediction of hurricane intensity.

The Rapid Update Cycle: Provides timely analysis updates every three hours and short-term forecasts.

Mesoscale Eta Model: Foremost for 1994 will be the implementation of a geographically fine-scale model called the Eta Model. It will be used mainly to provide detailed guidance to forecasters for localized weather phenomena.

New efforts will be made to assimilate new types of data such as radar, wind profiles and soil moisture into models.

Global Guidance: Older models are being improved by adding new types of data and new computational techniques.

Marine Prediction: Work on the development of a new wave forecast model will continue. Development and testing of sea ice prediction models will continue with an eye toward operational purposes. Coastal ocean prediction models will be tested for forecast skill and other variables.

NCDC Manager Honored for Excellence

The deputy director of NOAA's National Climatic Data Center (NCDC) in Asheville, N.C., has been honored by the local business community for excellence in public service.

Kenneth D. Davidson was named Asheville-Buncombe Public Service Employee of the Year for outstanding contributions to the community and his own agency. He was also named Outstanding Managerial Employee of the Year.

As a direct result of Davidson's diligence, leadership and managerial excellence, NCDC has increased its customer service response by 16 percent in the past year and placed new technology on line for easy access.

Kenneth D. Davidson

We See Food, We Eat It

Consumption Up

Americans ate more seafood in 1993 than in 1992—15 pounds per person, or nearly 3.9 billion pounds of domestic and imported seafood. That's an increase of about 150 million pounds over the 3.7 billion pounds Americans consumed in 1992.

NMFS officials said that the per capita consumption level of 15 pounds per person represents a moderate increase of 0.2 pounds over the 1992 level of 14.8 pounds.

Most Seafood Consumed is Frozen

Of the 15 pounds of seafood consumed per person, 10.2 pounds were fresh or frozen fish or shellfish, 4.5 pounds were canned seafood, and 0.3 pounds of seafood was cured. Compared to the 1992 figures, that represents a 0.3 pound rise in fresh and frozen product, with a decline of 0.1 pounds in canned seafood.

Fisheries service officials said the increase in consumption is largely due to a decline in seafood exports and a rise in edible fish and shellfish caught in the U.S. Imported fish and shellfish constituted 53 percent of the seafood consumed in the United States in 1993.

Lobster Rules OK'd

Management measures freezing the minimum lobster catch size at 3¼ inches and initiating a five-year moratorium on the issuance of new Federal lobster permits were approved last month as part of an amendment to the lobster management plan aimed at rebuilding depleted Northeast stocks.

If the amendment had not been approved, the minimum size would have automatically increased to $3^{9}/_{32}$ inches on May 18. The 3¼ inch carapace length in Federal waters makes the Federal minimum size consistent with that of all the major lobster-producing states from Maine to New York.

Alaska Leads U.S. Fishing Ports for 1993

Commercial fishermen brought nearly 794 million pounds of fish, worth $161 million, to the port of Dutch Harbor-Unalaska, Alaska, in 1993—making it the port with both the highest volume and dollar value of fish in the country.

NMFS officials said the large volume of groundfish brought to Dutch Harbor-Unalaska was twice that of the second leading port of Kodiak, Alaska, with just over 374 million pounds. The port of Dutch Harbor-Unalaska has held the top landings slot for six years straight.

Landings at Dutch Harbor-Unalaska were worth $53 million more than those brought ashore at New Bedford, Mass., the second leading port in terms of dollar value with $107.5 million.

VOLUME (millons of pounds)	*1991*	*1992*	*1993*
Dutch Harbor-Unalaska, AK	731.7	736	793.9
Kodiak, AK	287.3	274	374.2
Empire-Venice, LA	309.4	276.5	335.4
Cameron, LA	289.1	246.3	323.1
Intercoastal City, LA	211.4	175.9	202.7
Pascagoula-Moss Point, MS	227.3	177	169.7
Morgan City-Berwick, LA	119.5	130.8	147.5
Dulac-Chauvin, LA	166.8	66	142.4
Petersburg, AK	90.3	81	110.2
Ketchikan, AK	68.5	70	100.6

VALUE (millons of dollars)	*1991*	*1992*	*1993*
Dutch Harbor-Unalaska, AK	130.6	194	161.2
New Bedford, MA	157.7	151.8	107.5
Kodiak, AK	96.9	90	81.5
Empire-Venice, LA	50.2	58.7	52.3
Portland, ME	44.1	43.6	49.1
Dulac-Chauvin, LA	52.1	52.8	48
Brownsville-Port Isabel, TX	71.5	54.9	46.6
Cape May-Wildwood, NJ	40.1	34.9	36.2
Point Judith, RI	37.5	36.6	35.2
Key West, FL	35.1	17.4	35.2

Satellite Partners Could Join Polar Program

The United States' European partners in Earth observation from space have been invited to explore participating in the converged, polar-orbiting environmental satellite program that was announced by the White House last month. Participants in the U.S. program include NOAA, the U.S. Department of Defense (DoD), and the National Aeronautics and Space Administration (NASA).

The European METOP (METeorological OPerational mission) polar satellite series is an important asset in the global effort to better understand the environment. As a result, the United States has invited its European partners to explore incorporating the European METOP polar satellite series into the converged system, assuming U.S. mission requirements can be met. The METOP series is a joint undertaking of the European Organisation for the Exploitation of Meteorological Satellites (Eumetsat) and the European Space Agency (ESA). Building on long-standing plans for Europe to assume morning polar satellite coverage, NOAA intends to provide sensors for flight on the initial satellites in the METOP series. The invitation for METOP to participate in the converged program underscores the importance the United States places on cooperation with Europe.

"Cooperation with the METOP series and our Eumetsat and ESA partners is critical to our efforts to enhance further development of a global operational observing system," said NOAA Administrator Dr. D. James Baker.

Eumetsat Director John Morgan welcomed the invitation. He said the organization would discuss the invitation with member delegations and work closely with ESA to respond.

"This new initiative is clearly in the spirit of the Joint Polar System we are already working with you to develop," Morgan said. "I see no reason why it should change the level of cooperation."

Defense and NOAA Satellites Merged

The convergence plan will bring together DoD's Defense Meteorological Satellite Program (DMSP) and the NOAA Polar-orbiting Operational Environmental Satellite (POES) system into a single operational environmental satellite system. In addition, the operational program will incorporate appropriate aspects of NASA's Earth Observing System technologies.

Under the directive, NOAA was named lead agency for integrating the two systems into one, for satellite operations, and for the interface with national and international civilian users. DoD will have responsibility for the program's acquisitions, command and control, and launch and systems integration. NASA will be responsible for facilitating the development and incorporation of new cost-effective technologies that will enhance the capabilities of the converged system.

"Cooperation with the METOP series and our Eumetsat and ESA partners is critical to our efforts to enhance further development of a global operational observing system," said NOAA Administrator Dr. D. James Baker.

The new system is expected to reduce duplication of efforts in meeting common requirements while satisfying the unique requirements of the civil and national security communities. The merged system will continue the open distribution of environmental data and accommodate international cooperation.

New Estuarine Reserve Dedicated: Delaware Governor Thomas R. Carper and NOAA officials dedicated last month the Delaware National Estuarine Research Reserve. The Delaware NERR is the latest addition to a system of 22 national reserves.

'93 Flood Felt on East Coast: Report

Last year's severe Midwest flooding caused significant changes to the landscape throughout the area, and ultimately to the coastal ocean, sending large volumes of fresh water down the Mississippi River during a time of year usually characterized by lower flows, according to a report released jointly by NOAA's Coastal Ocean Program Office and National Weather Service.

The 77-page report, *Coastal Oceanographic Effects of Summer 1993 Mississippi River Flooding*, was prepared by 31 Gulf of Mexico and east coast scientists. This summary of the flood's meteorological, hydrological and oceanographic effects contributed to NOAA's oceanographic effects assessment.

More than 15 million acres across nine states were inundated by the Great Flood of 1993. The entire state of Iowa was designated as a Federal disaster area. Large sections of eight other states—North Dakota, South Dakota, Minnesota, Wisconsin, Illinois, Missouri, Nebraska and Kansas—were also declared Federal disaster areas. The number of fatalities caused by the flood is estimated at 48. Approximately 54,000 people had to be evacuated from flooded areas at some time during the flood, and 50,000 homes were estimated to have been destroyed or damaged.

Preliminary estimates establish this as the costliest flood event in U.S. history.

The timing of the flooding was a critical factor in determining the impact on the marine environment. The effects of the freshwater inflow were detected not only in the northern Gulf of Mexico, but also in the Florida Keys and along the U.S. east coast.

continued from page 1

science category recipients of the prestigious Arthur S. Flemming Award. Susan Solomon, a senior scientist in NOAA's Aeronomy Laboratory in Boulder, Colo., was recognized for "key scientific contributions to deciphering the causes of the Antarctic ozone hole and leading the 1986-87 National Ozone Expeditions to Antarctica." Solomon's work led to an international protocol to phase out the manufacture of chlorofluorocarbons to save the earth's protective ozone layer.

The Flemming Awards are given annually by the Downtown Jaycees of Washington, D.C., to 10 Federal government employees under the age of 40 in recognition of their outstanding achievements in either science or administration.

Antarctic Whale Sanctuary OK'd: The International Whaling Commission, at its annual meeting last month in Puerto Vallarta, Mexico, voted to create an 11.8 million-square-mile sanctuary for whales in the Southern Ocean.

NEWS BRIEFS

The Southern Ocean Sanctuary, as it was first proposed by France in 1992 and co-sponsored by the United States and eight other IWC countries, would have banned all commercial whaling south of 40 degrees south latitude in a line skirting southern Africa and Australia and cutting through southern South America. The modified sanctuary proposal approved creates a sanctuary somewhat smaller than the original French proposal, but encompasses the major feeding grounds of all the great whales in the Antarctic, including the blue, humpback and minke whales.

"We're very pleased with the outcome of this vote," NOAA administrator and U.S. IWC commissioner Dr. D. James Baker said. "The sanctuary has been a major goal of the U.S. at the IWC, and both President Clinton and Vice President Gore have fought hard for it."

Baker added that the sanctuary will give an additional layer of protection to whales by ensuring that no commercial whaling, regardless of species, can take place within it.

Fifth Annual Climate Assessment Issued

El Niño Eased Severe '93 Calif. Drought

Global climate in 1993 was dominated by a prolonged El Niño effect, which, among other factors, helped alleviate the severe drought in California, according to a team of NOAA scientists.

The El Niño/Southern Oscillation (ENSO)—the interaction of the ocean and atmosphere in the eastern central Pacific Ocean—developed in 1991 and ended in 1993, making it one of the three most prolonged warm episodes observed this century. The other episodes were 1911-1913 and 1939-1941.

The Fifth Annual Climate Assessment, issued by NOAA's Climate Analysis Center, reviewed global climate variations and trends during the past year. The report highlights several significant events:

- ENSO's eastward shift in thunderstorm activity contributed to changes in atmospheric jet streams and weather patterns worldwide. It produced anomalous weather patterns in both the tropics and extratropics. Along the equator monthly rainfall was estimated 150 mm. above normal (December 1992 through August 1993), while below-normal rainfall occurred over Indonesia and northern Brazil. A slightly weaker than normal monsoon was also estimated for western India.
- The Great Flood of 1993 devastated a nine-state area in the U.S. heartland during June-July, posting record flood conditions throughout the Mississippi-Missouri watershed. St. Louis had 80 days above flood stage; Davenport, Iowa was at flood stage for 43 days; and Kansas City was at flood stage for 30 days.
- Global temperature in 1993 paralleled a pattern that dominated both hemispheres during the 1980s. Surface temperature (land only) showed a slight rise of 0.2 degrees Celsius (0.35 degrees Fahrenheit). The report notes the temperature increase was comparable to the warm departure observed in 1992, but less than the extreme value of 0.5 degrees Celsius in 1990.
- Antarctic springtime ozone values in 1993 were the lowest ever recorded, and winter Northern Hemisphere mid-latitude ozone depletions recovered to near-normal values.

NMFS Team Praised by Seattle Board

Seven employees of NMFS's National Marine Mammal Laboratory (NMML) in Seattle were given special recognition last month by the Seattle Federal Executive Board.

The group consisted of Dr. Robert Delong, Program Leader; Patrick Gearin, Brad Hanson, Harriet Huber, Steven Osmek, and James Thomason, all wildlife biologists; and Sharon Melin, a fisheries biologist assigned to NMML. In making the award, the Board said, "They have distinguished themselves over the past five years, through a team approach with state biologists and native tribes, by helping to reverse the decimation of steelhead and salmon by capturing and removing the predators, and by investigating why the locally rare harbor porpoise is disappearing from Washington."

The special recognition was part of the Seattle FEB's annual "Celebration of Public Service."

NOAA Report is a monthly publication for NOAA employees from the NOAA Office of Public Affairs, Washington.
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